

BETWEEN BYTES

THE JOURNAL OF THE JERSEY ATARI COMPUTER SOCIETY.

Volume 5, Number 12

December 1987

\$2.00

Next Meeting:
Tuesday, December 15
at 7:00pm

**Smoothtalker
Goldrunner**

**PARTY!!
Ace of Aces**



**We will meet at
the Camden
County Library,
next to the
Echelon Mall.**

MEETING NOTES

By Chuck Babli

August is normally the month in which JACS celebrates its birthday; however, due to the dramatic changes wrought upon us by the move from our old meeting place, the celebration of JACS' birthday had to be put on the back burner.

Now it's time to pay the piper. The December meeting will feature a double party. Not only will we celebrate a belated 5th birthday for JACS, but also a Christmas party. In honor of the situation, Forrest Blood has promised to have a little something for every person in attendance. So, come to the meeting and help us celebrate.

As for demonstrations, we have Frank Staiano in a return engagement. Again, Frank will attempt to demonstrate Ace of Aces, if the people from Accolade are cooperative.

For an ST demo, Irv Feinberg (you all remember Irv, don't you?) has agreed to do two quickies. First, he has Goldrunner, a futuristic shoot-em-up action game. Next he will show us First Byte's Smoothtalker. This disk features 5 educational programs complete with voice simulation.



JACS

JERSEY ATARI COMPUTER SOCIETY

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ATARI™



A NOTE FROM THE PRESIDENT

Another year is drawing to a close. I hope that everybody had a truly thankful Thanksgiving and that the leftover turkey did not last for too many meals. I must apologize to the membership for missing the last meeting but unfortunately my only means of transportation had developed problems on the day of the meeting and had to be fixed then and there. Hopefully the meeting was enjoyed by all.

Before I go much further let me wish everybody a very happy holiday season, a prosperous New Year, lots of computer presents and good health in the coming year.

Now to more mundane things. As we have been in our new location for a few meetings I hope that everybody likes the time and the meeting format. If there are any suggestions please let me or any member of the Executive Board know. We are always willing to listen even if all suggestions are not implemented straight away. Not every suggestion can be used, but that is no reason not to get involved.

JACS' anniversary was right in the middle of our move from Haddonfield to the Library and regretfully the Executive board decided to postpone our usual birthday party. Fret no more. The December meeting will make up for the delay. We have decided to hold a combined birthday and Christmas party to make up for it. There will be a short business meeting and then we will have a social hour to celebrate the end of another, hopefully successful, year. That is all for now. I am sure that other people write much more interesting articles and that "Between Bytes" will be really full this month.

Once again on behalf of the Executive Board and myself, I wish to extend my best wishes for the coming season.

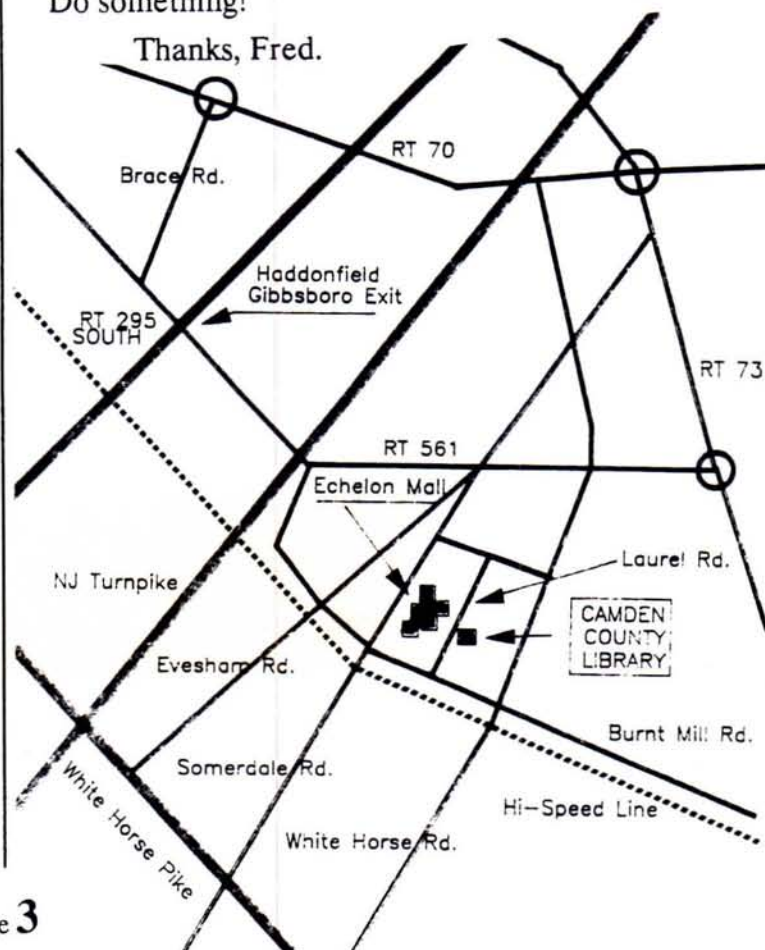
Ian Sklodowski

MOST VALUABLE MEMBER Fred Pomeroy



Fred is currently both the co-disk librarian and co-editor. He also has done a lot of other behind-the-scenes work, and doesn't really get any credit.

This feature is where we can thank members like Fred, for the wonderful job they do. YOU! Get out of your chair! Do something!



BASIC Subroutines

by Robert S. Ely

This is the first of many articles that will discuss useful blocks of BASIC programming that you can use and modify for your own programs. We will look at how to print text from the screen as you see it on the screen; how to convert numbers into ATASCII characters that can be used in many ways, such as saving disk space when saving numbers, saving memory space in long programs in data statements, etc. We'll also look at note and point, direct access files, how they work and how to construct and use these files. These will all be in the form of subroutines to be added to your BASIC language programs.

Our first subroutine is a two part routine. Suppose you have developed a program that prints data to the screen, and you want the user of the program to have a choice as to whether he wants to see the data only on the screen, or print the data to the screen and to the printer. If you make this option available, you will find that you would have to set up two print routines to handle the screen and the printer. Our object here is to streamline the program so that you only need to format the screen data; then, if the user decides he wants to print a hard copy of this screen data, we just go to a subroutine to handle the printout of what is on the screen. The idea is that the printout looks exactly the same as the screen display.

First we create a short menu to tell the program what type of printout we need—screen only, or screen and hard copy. Then we add the subroutine. All the subroutine does is load a string with the characters found on one line of the screen (one screen display line). When the string is full of characters, it is dumped to the printer. This happens until all of the lines on the screen have been printed. We then return to the main program.

To control whether or not we need to go to our subroutine, we will use the variable PRNT\$. PRNT\$ will either equal nothing or S. S stands for "select on." You will also notice that the user can select whether or not to print the data that is on this screen. A prompt is displayed: PRINT THIS SCREEN (Y/N). If the user answers Y to the prompt and PRNT\$ equals S then the screen is dumped. If he selects N, then the subroutine is skipped.

Type in listing 1, then list it to your storage device with LIST "Dn: PRNTRUTN.LST". To use this routine in your program, ENTER the routine from disk, being certain not to overwrite any program lines you have already written. Be sure that your listing of this routine's line numbers do not match any of the line

numbers in your program, as entering data from disk is like typing over your existing lines.

Listing 1:

```
10 DIM LINE$(40), PRNT$(1):GOTO 30000
20 LIST:GOSUB 32000:END
30000 REM PRINTER DUMP ON/OFF SELECT
30010 GRAPHICS 18:? #6;"SELECT PRINT O
PTION:"
30020 ? #6:? #6;"A) SCREEN ONLY":? #6;
"B) SCREEN / PRINTER":POKE 764,255
30030 IF PEEK(764)=255 THEN 30030
30040 IF PEEK(764)=63 THEN POKE 764,25
5:PRNT$="":GOTO 20
30050 IF PEEK(764)<>21 THEN POKE 764,2
55:GOTO 30030
30060 POKE 764,255:PRNT$="S":GOTO 20
32000 REM PRINTER DUMP ROUTINE
32010 IF PRNT$="" THEN RETURN
32020 POSITION 8,23:? "PRINT THIS SCRE
EN (Y/N)":POKE 764,255
32030 IF PEEK(764)=255 THEN 32030
32040 IF PEEK(764)=43 THEN POKE 764,25
5:GOTO 32070
32050 IF PEEK(764)<>35 THEN POKE 764,2
55:GOTO 32030
32060 POKE 764,255:RETURN
32070 FOR ROW=0 TO 22:FOR COL=0 TO 39
32080 LOCATE COL,ROW,CHAR:LINE$(LEN(LI
NE$)+1)=CHR$(CHAR):NEXT COL
32090 LPRINT LINE$:LINE$="":NEXT ROW
32100 RETURN
```

Stuff for Sale

Alphacom 42 Printer, a 40 column thermal printer that prints at 80 cps. It directly connects to a daisy-chain serial port—no interface needed. It prints the entire ATASCII character set. It even includes 6 rolls of thermal paper!

Andy Robot, a 12 inch high robot that connects to the joystick ports on an Atari 8-bit computer. It includes the Andy Command disk and D batteries.

Both are in good working condition will sell for \$25 each, or I'll trade both for a working P/R: Connection or 850 interface. Call Forrest Blood at 877-3579.

November Meeting Notes

by Debbie Collarin

The November meeting was called to order at 7:10 PM by the 8-bit vice-president, Chuck Babli.

The first ST demo was "OCP Art Studio" by Forrest Blood, our treasurer. Forrest stated that this is an enhanced version of NEOchrome. This is a very powerful paint program compared to others. It has a smoothing option to reduce "noise" in digitized pictures, but that also eliminates some detail. This program also has an animation demonstration that was very interesting. This company also has an interesting way to prevent piracy. When it boots up it will ask for a certain word in the manual that is on a certain page, certain paragraph and certain numbered word.

During the question & answer period of the meeting it was brought up that there is a new BBS. It is called the SJ ST Exchange; the phone number is 859-1183. Also there were questions brought up about the US Doubler by ICD. In general the group felt that this was a good addition and it is easy to install.

There was also some discussion on Fleet Street vs Publishing Partner. Most people seem to think that even though Publishing Partner has some problems it is better than Fleet Street.

Bob Whipple, ST Coordinator, showed us the samples from No-Frills Software. He also said we will have this on consignment at Trenton plus other computer formats of our JACS Print Shop disks.

The break was from 8:00 to 8:15. After which we discussed the Christmas Party. This will be a pizza & soda party, plus plenty of DOOR PRIZES!!!! Is Chuck going to get volunteers this way for next year?? Chuck also sent around an urgent request again for 8-bit demonstrations or we will be having a lot of ST demos or Ian's word processors. *[I've got a nice big word processor too! -Ed.]*

Frank Staiano, 8-bit Disk Librarian, did a great demonstration of Beach Head II. This is part of the triple pack which includes Beach Head, Raid on Moscow, and Beach Head II. Frank said that the triple pack only costs \$19.99; not a bad price for three games. He said that as soon as Accolade gets Ace of Aces fixed so that he can play it on his 800 he will demonstrate it. Hopefully we will see it soon.

The 50/50, which was 5 JACS Bucs, was won by Joe Verble, our reference librarian. Michael Fein won the door prize. The meeting was adjourned at 8:50 PM.

Happy Thanksgiving to everyone from the executive board. Hope to see everyone at our CHRISTMAS AND BIRTHDAY PARTY!!!



AVAILABLE NOW!

Printer Ribbons
ONLY \$6.00 ea.

For the following printers

Atari SM804, XMM801	CTI CT-801
Admate DP-80	Etronics SX 80P
Admate DP100, DP130	Formula FP-80
BMC BX-80, BX-130	Legend 880, 1080
Commodore 1526, MPS-802	Mann. Tally SP-80
Computer Mate CP 80	Sekonic SP-80
	Sperry 0245

JUST TALK TO OUR
TREASURER,
FORREST BLOOD, AT
THE MEETING!

Function Grapher

By Larry Nocella

Mathematics is difficult enough, without having to graph functions and formulas, but your ever-faithful computer is here to help you. Some equations are even interesting to look at. Math? Interesting? With your Atari to take away the drudgery, some experimentation is fun. Your graph can cover an area that you specify, showing closeups or far-away views. Type the program below in basic, SAVE a copy, and we're set. Type RUN.

After a short set up routine, the program asks you for a formula. It can be anything as long as it starts with $Y=$ or $X=$. It must be Y in terms of X , or if you need it, X in terms of Y . Examples: $Y=X^2$ (a parabola) or $X=Y$. It's better to use X^2 instead of X^2 , since the former is faster. The equation $Y^2 + X^2 = R^2$ is the equation for a circle around the origin of the cartesian plane. You must get the Y on one side and everything else in the formula on the other side, so it would become: Y the radius (R) to be nine, the equation you would enter into the program would be: $Y=\text{SQR}(81-(X^2))$. All functions that work in BASIC (SQR, ABS, COS, SIN) work in this program.

The next question the program asks is distance between each space. The grid has 31 marks on the x -axis, and 18 on the y -axis. If you enter 1 at this prompt, the plane's x -axis goes from -15 to 15 and the y -axis from -9 to 9 stepping one at a time between each "notch" on the axis that you'll see when the graph is drawn. If you enter 10 at this prompt, the graph will go from -150 to 150 on the x -axis, and -90 to 90 on the y -axis. The center of the plane is always the origin, coordinates (0,0).

The next prompt asks for the graph you would like to be displayed, with numbers, without numbers, a plane, a grid (like graph paper), or blank. After this prompt has been entered, the screen will blank for a moment and then display your graph. Try this; enter the circle equation above, with a 1 for distance between each space. The circle should be almost as big as the screen with a radius nine. Try the same equation, with 10 between each space, the circle will be very small; since its radius is still nine, it is as though you had stepped back, enlarging the "graph paper," with the same equation plotted. Enter 0.1 for the distance, and you'll see a blank graph, as the circle plot is too big to be seen at all, as if you had moved your face too close to the paper. Most graphs are

useable with a distance of 1, but others may call for different values. Use the three basic ones: 1, 10, 0.1 before experimenting with other numbers. They can range between 0.1 and 10, including such numbers as 0.2, 2, etc.

Once the graph is shown to you, you may push:

START to plot another function.

OPTION to dump the graph to an SG-10 printer with the famous 49 second screen dump from COMPUTE!'s Second book of Atari. If you have Charles F. Johnson's G: from a past ANALOG, you can enter listing 2 into the program and save it, and the program will dump the graph to G: when you push OPTION.

SELECT to display the function plotted.

ESCAPE to end the program.

This program operates on the same principles and routines as David Bader's "Polar Plotter" from the July/August 1987 issue of ANALOG. I hope you find this program useful.

Here are some equations for you to try:

$Y=\text{SQR}(81-(X^2))$ $Y=X^2$ $Y=X^2*X$ $Y=\text{COS}(X)$
 $Y=\text{SIN}(X)$ $Y=X$ $Y=\text{SQR}(\text{ABS}(X))$ $Y=X/((X^2)-9)$

LISTING 1:

```
100 DEF=1:GOTO 990
110 GOSUB 570:POKE 559,0
120 FOR I=START TO STP STEP REZ
130 IF TERMS=0 THEN X=I:GOTO 150
140 Y=I
150 TRAP 320:POKE 712,14-ABS(I/COLR)
160 REM FORMULA GOES HERE
170 PX=(X*MUL)+160
180 PY=95-(Y*MUL)
190 PLOT PX,PY
200 IF OX<>0 OR OY<>0 THEN DRAWTO OX,OY
210 IF SQ<>1 THEN GOTO 290
220 REM *** SQR SECTION ***
230 Y=-Y
240 HX=(X*MUL)+160
250 HY=95-(Y*MUL)
260 PLOT HX,HY
270 IF ZX<>0 OR ZY<>0 THEN DRAWTO ZX,ZY
280 ZX=HX:ZY=HY
290 TRAP 44444
```



```
300 OX=PX:OY=PY
310 NEXT I:GOTO 340
320 OX=0:OY=0:GOTO 310
330 REM *** DONE LOOP ***
340 POKE 712,2:POKE 559,34
350 IF PEEK(53279)=6 THEN 1050
360 IF PEEK(764)=28 THEN GRAPHICS 0:POKE 82,2:END
```

```
370 IF PEEK(53279)=3 THEN GOSUB 470
380 IF PEEK(53279)=5 THEN GOSUB 400
390 GOTO 350
400 GRAPHICS 8+32:POKE 712,2:POKE 709,12:POKE
710,0:?"EQUATION:":? Q$
410 ? :?"PUSH SELECT AGAIN...";
420 FOR I=1 TO 200:NEXT I
430 IF PEEK(53279)<>5 THEN 430
440 POKE 53279,7:FOR I=1 TO 50:NEXT I:?" :? :? :? :? :?
:GRAPHICS 8+48:POKE 712,2:POKE 709,12:POKE 710,0
450 RETURN
460 REM *** SCREEN DUMP ***
470 CLOSE #5:OPEN #5,8,0,"P:"
480 ? #5:CHR$(27);"A";CHR$(8):FOR T=SCM TO SCM+39
490 A$=CHR$(0):A$(192)=A$:A$(2)=A$
500 Q=USR(1536,T,ADR(A$)):LPRINT
CHR$(27);"K";CHR$(192);CHR$(0);A$:NEXT T
510 ? #5:CHR$(27);"@":CLOSE #5:LPRINT:LPRINT Q$
520 IF TERMS=0 THEN LPRINT "X-AXIS:":START;" TO
;STP;" Y-AXIS:":-9*(10/MUL);" TO ";9*(10/MUL):
GOTO 540
530 IF TERMS=1 THEN LPRINT "X-AXIS:":-15*(10/
MUL);" TO ";15*(10/MUL);" Y-AXIS:":START;" TO
";STP
540 LPRINT "DISTANCE BETWEEN EACH SPACE: ";
REZ*10:LPRINT "-----
--":LPRINT
550 FOR T=32 TO 2 STEP -1:POKE 712,T:NEXT
T:RETURN
560 REM *** START TO DRAW! ***
570 GRAPHICS 24:POKE 710,0:POKE 708,14:POKE
559,34:Q=USR(ADR(Z$),0,0,ADR("^\"),1)
580 Q=USR(ADR(Z$),39,0,ADR("^\"),1):SCM=PEEK(88)+
PEEK(89)*256:SCM=SCM+40*191:COLOR 1
590 IF GRAF=5 THEN 940
600 IF GRAF=6 THEN 790
610 PLOT 160,0:DRAWTO 160,191
620 PLOT 0,95:DRAWTO 319,95
630 REM *** DRAW PLANE ***
640 FOR I=10 TO 310 STEP 10
650 PLOT I,93:DRAWTO I,98:NEXT I
660 FOR I=95 TO 5 STEP -10
670 PLOT 157,I:DRAWTO 163,I:NEXT I
680 FOR I=95 TO 185 STEP 10
690 PLOT 157,I:DRAWTO 163,I:NEXT I
700 IF GRAF=1 THEN 940
710 IF GRAF=2 THEN 790
```

```
720 REM *** DRAW GRID ***
730 FOR I=10 TO 310 STEP 10
740 PLOT I,5:DRAWTO I,185:NEXT I
750 FOR I=5 TO 185 STEP 10
760 PLOT 10,I:DRAWTO 310,I:NEXT I
770 IF GRAF=3 THEN 940
780 REM *** DRAW NUMBERS ***
790 FOR I=-15 TO 15 STEP 3
800 INV=0:XQ=(I+15)/3:XX=XVALU(XQ):B=I:IF I<0 TH
INV=1:B=-I
810 IF I=0 THEN 860
820 D$="":D$=STR$(REZ*B*10)
830 QQ=11:IF INV=1 THEN FOR Q=1 TO LEN(D$):XZ=
ASC(D$(Q,Q)):D$(Q,Q)=CHR$(XZ+128):NEXT Q
840 IF XQ/2<>INT(XQ/2) THEN QQ=12
850 Q=USR(ADR(Z$),XX,QQ,ADR(D$),LEN(D$))
860 NEXT I
870 FOR I=-9 TO 9 STEP 3
880 INV=0:XX=YVALU((I+9)/3):B=-I:IF B<0 THEN
INV=1:B=ABS(I)
890 IF I=0 THEN 930
900 D$="":D$=STR$(REZ*B*10)
910 IF INV=1 THEN FOR Q=1 TO LEN(D$):XZ=
ASC(D$(Q,Q)):D$(Q,Q)=CHR$(XZ+128):NEXT Q
920 Q=USR(ADR(Z$),19,XX,ADR(D$),LEN(D$))
930 NEXT I
940 MUL=(10/(REZ*10))
950 IF TERMS=0 THEN START=-15*(10/MUL):STP=
-START:GOTO 970
960 START=-9*(10/MUL):STP=-START
970 RETURN
980 REM START
990 DIM A$(192),Z$(169),Q$(120),D$(3),XVALU(10),
YVALU(7)
1000 RESTORE 1000:FOR I=0 TO 10:READ
Q:XVALU(I)=Q:NEXT I:DATA 0,4,8,12,16,0,23,27,31,34,37
1010 RESTORE 1010:FOR I=0 TO 7:READ
Q:YVALU(I)=Q:NEXT I:DATA 0,4,8,0,15,19,23
1020 RESTORE 1320
1030 FOR T=1 TO 168:READ Q:Z$(T)=CHR$(Q):NEXT T
1040 FOR T=1 TO 61:READ Q:POKE 1535+T,Q:NEXT T
1050 GRAPHICS 0:POKE 710,2:POKE 82,0:POKE
709,12:POKE 712,0
1060 POSITION 0,0:?" FUNCTION GRAPHER BY:
LARRY NOCELLA "
1070 OX=0:OY=0:PX=0:PY=0:HX=0:HY=0:ZX=0:ZY=0
1080 ? "OPTION = SCREEN DUMP (FOR SG-10)"
1090 ? "SELECT = SHOW EQUATION"
1100 ? "START = RE - START PROGRAM"
1110 ? "ESC = END PROGRAM":?
1120 SQ=0:?"ENTER FORMULA: Y IN TERMS OF X":?
" OR X IN TERMS OF Y":?"->":INPUT #16,Q$:IF
Q$="" THEN 1050
1130 IF Q$(1,1)="Y" THEN TERMS=0:GOTO 1160
1140 IF Q$(1,1)="X" THEN TERMS=1:GOTO 1160
```



```

1150 ? :? :? "ERROR! RESTARTING...";:FOR T=1 TO
1000:NEXT T:GOTO 1050
1160 FOR T=1 TO LEN(Q$)-2
1170 IF Q$(T,T+2)="SQ" THEN SQ=1
1180 NEXT T
1190 TRAP 1190: ? :? "ENTER DISTANCE BETWEEN
EACH SPACE.":? "(LOWEST = 0.1 / HIGHEST =
10.0)->":INPUT #16,REZ
1200 TRAP 44444
1210 IF REZ<0.1 OR REZ>10 THEN 1190
1220 ? :? "1. PLANE":? "2. PLANE WITH NUMBERS":?
"3. GRID":? "4. GRID WITH NUMBERS":? "5. BLANK"
1230 ? "6. BLANK WITH NUMBERS":?
1240 ? "(RETURN = 1) ->":TRAP 1260:INPUT
#16,GRAF:IF GRAF<1 AND GRAF>6 THEN TRAP
44444:GOTO 1240
1250 GOTO 1270
1260 GRAF=DEF
1270 REZ=REZ/10
1280 POKE 559,0: ? }":POSITION 0,6: ? "160 ";Q$: ? :? :?
"CONT":POSITION 0,0
1290 POKE 842,13:STOP
1300 POKE 842,12:COLR=REZ*10:GOTO 110
1310 REM *** BORING ML DATA ***
1320 DATA 104,201,4,240,9,170,240,5,104,104,202,208,
251,96,104,133,215,104,133,214,104,104,168,104,133
1330 DATA 217,104,133,216,104,104,240,236,133,212,24,
165,214,101,88, 133,214,165,89,101,215,133,215,152, 240,15
1340 DATA 165,214,105,64,133,214,165,215,105,1,133,
215,136,208,241,132,221,160,0,132,220,177,216,160,0, 170
1350 DATA 16,1,136,132,213,138,41,96,208,4,169,64,16,
14,201,32,208,4,169,0,16,6,201,64,208,2
1360 DATA 169,32,133,218,138,41,31,5,218,133,218,169,
0,162,3,6,218,42,202,208,250,109,244,2,133,219
1370 DATA 164,221,177,218,69,213,164,220,145,214,200,
132,220,196,212,208,182,24,165,214,105,40,133,214,144, 2
1380 DATA 230,215,230,221,169,8,197,221,208,159,96,
207,96
1390 DATA 104,104,141,21,6,104,141,20,6,104,141,27,6,
104,141,26,6,160,193,173,255,255,136,240,35,141,255,
255,238
1400 DATA 26,6,240,21,173,20,6,56,233,40,141,20,6,144,
4,24,76,19,6,206,21,6,76,19,6,238,27,6,76,33,6,96

```

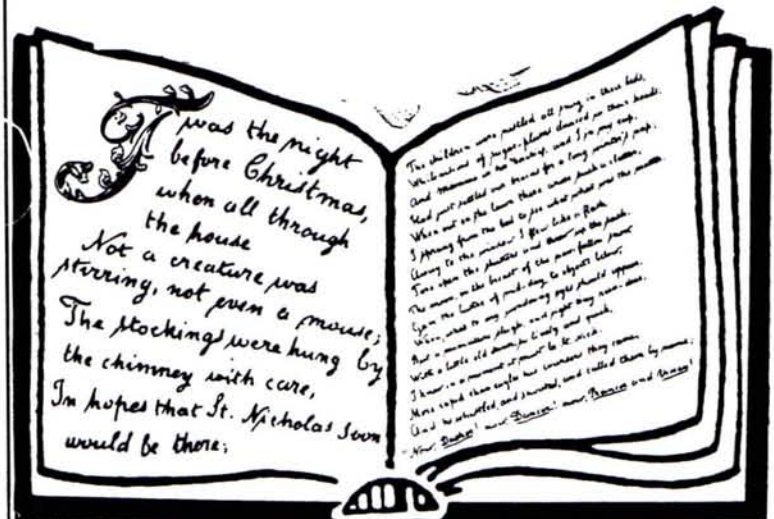
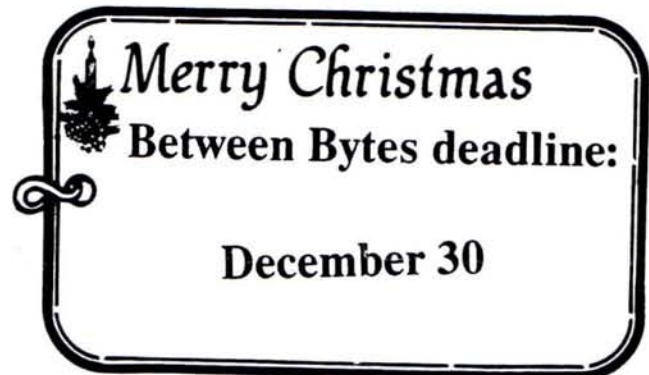
LISTING 2:

```

460 REM *** SCREEN DUMP ***
470 XIO 64,#1,2,0,"G1:"
480 REM
490 REM
500 REM
510 REM

```

**HAPPY
HANUKKAH**



...and to All a Good Night